

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A semiconductor device manufacturing method comprising:

~~a first step of forming, by a thermal chemical vapor deposition method, a silicon nitride film on an object disposed in a reaction container, with bis tertiary butyl amino silane and NH<sub>3</sub> flowing into said reaction container, and~~

~~a second step of removing silicon nitride formed in said reaction container, with NF<sub>3</sub> gas flowing into said reaction container, before said silicon nitride film formed in said reaction container reaches a thickness of 4,000 Å.~~

2. (Currently Amended) The semiconductor device manufacturing method as recited in claim 1, further comprising said ~~first step~~ forming said silicon nitride film after said ~~second step removing said silicon nitride~~.

3. - 5. (Previously Canceled)

6. (Previously Amended) The semiconductor device manufacturing method as recited in claim 1, wherein

said reaction container is made of quartz and a member made of quartz is used in said reaction container.

7. (Currently Amended) The semiconductor device manufacturing method as recited in claim 1, wherein

said ~~second step removing said silicon nitride~~ is carried out in a state where a pressure in said reaction container is greater than or equal to 10 Torr.

8. (Currently Amended) The semiconductor device manufacturing method as recited in claim 1, further comprising ~~a step of~~  
purging said reaction container using said  $\text{NH}_3$  gas at least one of before and after ~~said first step~~ forming said silicon nitride film.

9. – 21. (Previously Canceled)

22. (Currently Amended) A semiconductor device manufacturing method comprising:  
~~a first step of~~ forming, by a thermal chemical vapor deposition method, a silicon nitride film on an object disposed in a reaction container, with bis tertiary butyl amino silane and  $\text{NH}_3$  flowing into said reaction container, and  
~~a second step of~~ removing silicon nitride formed in said reaction container, with  $\text{NF}_3$  gas flowing into said reaction container, before said silicon nitride formed in said reaction container reaches a thickness of 4000 Å and before said silicon nitride film formed in said reaction container reaches a thickness that generates particles on said object.

23. (Currently Amended) The semiconductor device manufacturing method as recited in claim 22, further comprising  
said ~~first step~~ forming said silicon nitride film after said ~~second step~~ removing said silicon nitride.

24. (Previously Amended) The semiconductor device manufacturing method as recited in claim 22, wherein

said reaction container is made of quartz and a member made of quartz is used in said reaction container.

25. (Currently Amended) The semiconductor device manufacturing method as recited in claim 22 wherein

~~said second step~~ removing said silicon nitride is carried out in a state where a pressure in said reaction container is greater than or equal to 10 Torr.

26. (Currently Amended) The semiconductor device manufacturing method as recited in claim 22, further comprising ~~a step of~~

~~purging said reaction container using said NH<sub>3</sub> gas at least one of before and after said first step~~ forming said silicon nitride film.

27. (Currently Amended) A semiconductor device manufacturing method comprising:

carrying at least one object to be film-formed into a reaction container;

~~a first step of forming, by a thermal chemical vapor deposition method, a silicon nitride film on said an object disposed in a said reaction container, with bis tertiary butyl amino silane and NH<sub>3</sub> being provided flowing into said reaction container; and~~

~~a second step of removing silicon nitride formed in said reaction container, with NF<sub>3</sub> gas flowing into said reaction container; and~~

~~a step of purging said reaction container using said NH<sub>3</sub> gas after carrying said object into said reaction container and at least one of before and after said first step~~ forming said silicon nitride film;

carrying said object on which said silicon nitride film has been formed out of said reaction container; and

removing silicon nitride formed in said reaction container after said object has been carried out, with NF<sub>3</sub> gas being provided into said reaction container.

28. (Currently Amended) The semiconductor device manufacturing method as recited in claim 27, further comprising said forming said silicon nitride film first step after said ~~second step~~ removing said silicon nitride.

29. (Previously Amended) The semiconductor device manufacturing method as recited in claim 27, wherein

said reaction container is made of quartz and a member made of quartz is used in said reaction chamber.

30. (Currently Amended) The semiconductor device manufacturing method as recited in claim 27, wherein

said ~~second step~~ removing said silicon nitride is carried out in a state where a pressure in said reaction container is greater than or equal to 10 Torr.

31. (New) A semiconductor device manufacturing method, comprising:  
carrying at least one substrate into a reaction container;

forming, by a thermal chemical vapor deposition method, a silicon nitride film on said substrate disposed in said reaction container, with bis tertiary butyl amino silane and NH<sub>3</sub> being provided into said reaction container;

carrying said substrate on which said silicon nitride film has been formed out of said reaction container; and

removing silicon nitride formed in said reaction container, with NF<sub>3</sub> gas being provided into said reaction container, before said silicon nitride formed in said reaction container reaches a thickness of 4000 Å.

32. (New) The semiconductor device manufacturing method as recited in claim 31, further comprising said forming said silicon nitride film after said removing said silicon nitride.

33. (New) The semiconductor device manufacturing method as recited in claim 31, wherein  
said reaction container is made of quartz and a member made of quartz is used in said reaction container.

34. (New) The semiconductor device manufacturing method as recited in claim 31, wherein  
said removing said silicon nitride is carried out in a state where a pressure in said reaction container is greater than or equal to 10 Torr.

35. (New) The semiconductor device manufacturing method as recited in claim 31, further comprising purging said reaction container using said  $\text{NH}_3$  gas at least one of before and after said forming said silicon nitride film.